

## WHAT IS CLAIMED IS:

1. A corn grain produced by planting in close proximity a corn plant of an agronomically elite high-yielding female parent, having high oleic characteristics, and optionally having high-oil characteristics, with a corn plant of a high-oil and high oleic male parent, optionally having high-yielding characteristics and/or agronomically elite characteristics.
2. The grain of Claim 1 wherein the high-oil, high oleic male parent plant, when self or sib pollinated, is capable of producing kernels having a total oil content ranging from 7.5% to 20% of the total seed weight, measured at zero percent moisture and an oleic acid content of not less than about 55% of the total oil content of the seed.
3. The grain of Claim 1 wherein the agronomically elite female parent, when self or sib pollinated, is capable of producing kernels having a total oil content of between about 2 percent to about 7.5 percent of the total seed weight, measured at zero percent moisture, wherein the oleic acid content is not less than about 55% of the total oil content.
4. The corn grain of Claim 1 wherein the high-oil, high oleic male parent, when self or sib pollinated, is capable of producing kernels having a total oil content ranging from 7.5% to 20% of the total seed weight, measured at zero percent moisture and an oleic acid content of not less than about 55% of the total oil content of the seed and wherein the agronomically elite female parent, when self or sib pollinated, is capable of producing kernels having a total oil content of between about 2 percent to about 7.5 percent of the total seed weight, measured at zero percent moisture, wherein the oleic acid content is not less than about 55% of the total oil content.

5. The grain of Claim 4 wherein the female parent has an oil content of of not less than 6% of the total seed weight, measured at zero percent moisture.

6. The grain of Claim 4 wherein the oleic acid content is about 3% to about 7% of the total seed weight.

7. A high oleic, high oil corn variety designated ASKC280L which bears the ATCC accession number 97042.

8. A high oleic corn inbred line designated B730L which bears the ATCC accession number 97026.

9. A high oleic corn inbred line designated AEC2720L which bears the ATCC accession number 97027.

10. Progeny plants and plant parts from any pedigree derived from the corn grain of Claim 1.

11. Progeny plants and plant parts from any pedigree derived from the corn grain of Claim 2.

12. Progeny plants and plant parts from any pedigree derived from the corn grain of Claim 4.

13. Progeny plants and plant parts from any pedigree derived from the corn line of Claim 7.

14. Progeny plants and plant parts produced from any pedigree derived from the corn line of Claim 8.

15. Progeny plants and plant parts produced from any pedigree derived from the corn line of Claim 9.

16. Corn plants and the seed thereof regenerated from the tissue culture of the plant or plant parts selected from the group consisting of Claims 10, 11, 12, 13, 14, and 15.

17. A method of developing corn varieties with altered levels of fatty acid compositions, including oleic acid, comprising treatment of seeds or pollen with a chemical mutagen to produce mutant plants.

18. The method of Claim 17 wherein the mutagen is selected from ethylmethanesulfonate and nitroso-methylurea.

19. A corn variety, produced by the method of Claim 17, having a total oleic acid content of not less

than about 55% of the total oil content of the seed,  
when measured at about zero percent moisture.

20. A method of improving the carcass quality of  
swine and poultry by feeding the swine and poultry the  
5 high oil, high oleic grain of Claims 1 and 4.

21. Oil obtained from grain selected from the group  
consisting of Claim 1, Claim 2 or Claim 4, possessing  
50% to 120% greater oxidative stability than oil  
obtained from "normal corn plants", said oxidative  
10 stability obtained without the addition of antioxidants.

22. The use of oil of Claim 21 in food, animal  
feed, cooking, or industrial applications.

23. An agronomically elite corn variety capable of  
producing grain having a total oleic acid content of  
15 between 5% and 10% of the total seed weight, measured at  
zero percent moisture.

24. The grain of Claim 1, Claim 3 or Claim 4  
wherein the female parent that is crossed to produce  
such grain is rendered male sterile by chemical,  
20 mechanical, or genetic means.

25. The corn grain of Claim 4 wherein the high  
oleic characteristics of both the female plant and the  
male plant are generated from a high oleic corn inbred  
line designated B73OL which bears the ATCC accession  
25 number 97026.

26. The corn grain of Claim 4 wherein the high  
oleic characteristics of both the female plant and the  
male plant are generated from a high oleic corn inbred  
line designated AEC272OL which bears the ATCC accession  
30 number 97027.

27. The corn grain of Claim 4 wherein the high  
oleic characteristics of the female plant are generated  
from a high oleic corn inbred line designated B73OL  
which bears the ATCC accession number 97026 and the high  
35 oleic characteristics of the male plant are generated  
from a high oleic corn inbred line designated AEC272OL  
which bears the ATCC accession number 97027.

28. The corn grain of Claim 4 wherein the high oleic characteristics of the female plant are generated from a high oleic corn inbred line designated AEC2720L which bears the ATCC accession number 97027 and the high oleic characteristics of the male plant are generated from a high oleic corn inbred line designated B730L which bears the ATCC accession number 97026.

29. The corn grain of Claim 1 wherein all the kernels produced from the planting in close proximity are harvested as grain.

30. The corn grain of Claim 1, wherein the corn grain borne by the female parent plant only, produced from the planting in close proximity, is selectively harvested.

31. A corn grain produced by planting in close proximity a corn plant of an agronomically elite high-yielding female parent having high oleic characteristics, and optionally having high high oil characteristics, with a corn plant of a high-oil, high oleic male parent, optionally having high-yielding characteristics and/or agronomically elite characteristics, wherein the ratio of female parent to male parent is not less than three to one.

32. The corn grain of Claim 31 wherein the ratio of female to male parent is six to one.

33. The corn grain of Claim 31 wherein the ratio of female to male parent is nine to one.

34. A corn grain produced by:

(a) planting in close proximity, in a field:

- (1) corn seed of a high-yielding and agronomically elite variety which has a high oleic characteristic, to obtain female corn plants wherein said female corn plants have been rendered male sterile by genetic, mechanical, chemical or a combination of such methods; and

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5 (2) corn seed of a high-oil, high oleic  
variety male corn plant, which  
optionally has high yielding  
characteristics, so as to produce  
high-oil, high oleic corn plants  
capable of serving as pollinators,  
wherein the ratio of corn seed of  
the high yielding female variety to  
10 the high-oil, high oleic variety  
male corn variety is not less than  
three to one;

(b) permitting said high-oil, high oleic  
male corn plants to pollinate said female corn plants;

15 (c) harvesting the resulting corn grain on  
all corn plants, thereby obtaining a high yield of corn  
grain possessing an oil concentration of 6% to 12% of  
the total seed weight measured at zero percent moisture  
and an oleic content of not less than about 55% of the  
total oil content of the seed.  
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